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Terri B. Natoli
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January 8, 1991

Donna R. Searcy
Secretary
Federal Communications Commission
1919 M Street, N.W., Room L-18
Washington, D.C. 20554

Re: In the Matter of the Petition of Norris Satellite Communications Inc. for Amendment of Parts 2 and 25 of the Commission's Rules to Establish a General Satellite Service in the Ka-Band
RM No. 7511

Dear Ms. Searcy:

Transmitted herewith for filing on behalf of GTE Spacenet Corporation is an original and required copies of its Reply Comments in the above-captioned proceedings. This filing was to have been made on January 7, 1991 but due to the fact that the Federal Communications Commission closed at 1:00p.m. on that date due to inclement weather it was not possible to file on that date.

Should any questions arise, please contact the undersigned.

Sincerely,

Terri B. Natoli

Terri B. Natoli

TBN/kmc

Enclosures

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BEFORE THE

Federal Communications Commission

WASHINGTON, D.C.

In The Matter Of NORRIS SATELLITE COMMUNICATIONS, INC. For Amendment of Parts 2 and 25 of the Commission's Rules to establish a General Satellite Service in the Ka-Band (30/20 GHz)	RM No. 7511

REPLY COMMENTS

GTE Spacenet Corporation ("GTE Spacenet"), by its attorneys, hereby submits its reply comments on the above-captioned petition for rulemaking filed by Norris Satellite Communications, Inc. ("Norris") and states as follows:

On July 16, 1990, Norris filed with the Commission its petition for rulemaking wherein it proposed the reallocation of frequencies in the 30/20 GHz band (i.e., the Ka-band) for the establishment of a general satellite service. As proposed by Norris, satellites operating in that frequency band could be used to provide fixed-satellite services (FSS), mobile satellite services (MSS) and direct broadcast satellite services. (DBS). Currently, those frequencies are allocated to the fixed-satellite service on a primary basis.[1]

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[1] Simultaneously with the filing of its rulemaking petition, Norris also filed an application for authority to launch and operate satellites in the fixed-satellite service at Ka-band. In its application, Norris indicates that, subject to Commission approval, it will use those satellites to provide FSS, MSS and DBS services as contemplated by its general satellite service proposal. GTE Spacenet has petitioned the Commission to deny Norris' application. See, GTE Spacenet's petition to deny

Several parties, including GTE Spacenet, have filed comments on Norris' petition for rulemaking.[2] GTE Spacenet opposes Norris' general satellite service proposal for several reasons. First, FSS, DBS and MSS are operationally incompatible with each other. Second, even if FSS, MSS and DBS operations over the same satellites using the same frequencies could be coordinated so as to minimize interference in a reduced orbital spacing environment, Norris' proposed reallocation would reduce available spectrum for FSS -- a service for which there has been consistent increase in demand -- in order to increase available spectrum for MSS and DBS -- services for which demand has not been sufficient to warrant additional allocations.

Unlike the services identified by Norris which utilize shared spectrum pursuant to the Commission's "generic" satellite service allocations[3], FSS, MSS and DBS cannot operate at the same frequencies using the same satellite without either causing intolerable interference or necessitating wide orbital separations. At C-band and Ku-band, fixed-satellites now operate in a two degree

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Norris' application, filed November 13, 1990, File Nos. 54-DSS-P/L-90 and 55-DSS-P-90.

[2] Other commenting parties include the American Mobile Satellite Corporation (AMSC), Geostar Messaging Corporation (Geostar) and Norris.

[3] See, Petition for Rulemaking and Request for Pioneer's Preference filed by Norris, July 16, 1990 at 2-3.

spacing environment. By reducing the orbital separations to two degrees, the Commission has been able to authorize more FSS satellites. These additional authorizations have increased availability of FSS services to the consuming public. Because of the higher power densities of DBS satellites, the Commission has found it necessary to require nine degree spacing between Ku-band DBS satellites. Assuming that DBS operations at Ka-band will, like DBS operations at Ku-band, necessitate nine degree separation, provision of DBS, FSS and MSS over the same satellites at the same frequencies will limit the number of available orbital positions for general satellite service satellites. As a result, less spectrum and orbital capacity to meet the growing demand for FSS services would be available. As GTE Spacenet explained in its initial comments in this proceeding, fifty state coverage at Ka-band would not be possible from any orbital location.[4]

In addition, GTE Spacenet explained that, contrary to Norris' assertion, creation of an otherwise inefficient general satellite service is not necessary to foster the development of Ka-band satellite operations. Just as growth of C-band services led to the

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[4] GTE Spacenet comments at 5-6. Even if coverage is limited to the contiguous United States (CONUS), not more than three satellites operating in the proposed general satellite service could be operational at the same time. See, Docket No. 89-554. An Inquiry Relating to Preparation for the International Telecommunication Union World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum, Comments of GTE Service Corporation, filed December 3, 1990, at 3.

development of FSS operations at Ku-band, it is likely that continued growth of market demand for additional services will lead to fixed-satellite expansion into the Ka-band frequencies. While Ka-band equipment is not yet available, it is likely to become available soon -- without creation of a general satellite service. The National Aeronautics and Space Administration's (NASA) Advanced Communications Technology Satellite (ACTS) -- a Ka-band satellite scheduled to become operational in 1992 -- will stimulate development of Ka-band equipment. Also, considerable amounts of research and development have been performed to make available Ka-band technology for the Department of Defense Milstar satellite system.

Other commentors have expressed concerns about Norris' general satellite proposal. AMSC notes that Norris' proposed use of Ka-band for mobile satellite services will not alleviate the current need for additional L-band allocations for MSS. As noted by AMSC, equipment is not yet available for MSS operations at Ka-band and it would be impractical for a single MSS satellite to operate in both L-band and Ku-band.[5] While future development of Ka-band equipment may make Ka-band usable for MSS operations, Ka-band is not a short-term solution to the need for additional MSS frequencies.

Geostar supports multi-service satellite allocations only when

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[5] AMSC comments at 2.

the additional services do not cause any greater interference than the levels permitted in the original system authorization.[6] In order to enable the Commission to determine whether such increased interference would result from a general satellite service allocation, Geostar suggests that a "detailed technical analysis" be performed to analyze the potential impact on conventional fixed services.[7]

GTE Spacenet concurs with Geostar's recommendation that no frequency reallocation to a general satellite service be considered until a comprehensive technical analysis is performed and evaluated. As the proponent of the general satellite service allocation, the burden is on Norris to provide such an interference analysis. No such analysis has been provided either with Norris' petition or with its application.

Accordingly, GTE Spacenet requests that the Commission direct Norris to submit to the Commission and to the parties to this proceeding a publicly-available, detailed technical analysis. That analysis should demonstrate the levels of interference to FSS services which would be caused by general satellite service operations, including MSS and DBS, at Ka-band.

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[6] Geostar comments at 2.

[7] Id. at 3. Geostar also notes that large inhomogeneities would exist between satellites designed to provide personal access or DBS services and satellites designed to provide fixed services. These inhomogeneities are what necessitate larger orbital separations and fewer available orbital locations.

Further, Norris should be required to demonstrate the orbital spacings and operating parameters necessary to prevent interference to FSS operations at Ka-band. GTE Spacenet further requests that, following submission of Norris' detailed technical analysis, interested parties be afforded the opportunity to respond to that analysis and, if they disagree with Norris' conclusions, to submit their own analyses. Unless and until the Commission has before it the necessary studies to evaluate the impact on FSS operations of MSS and DBS services at Ka-band, it will be unable to determine whether FSS, MSS and DBS operations could coexist in a general satellite service.

Even if, however, Norris is able to demonstrate that MSS and DBS operations could be compatible with FSS operations at Ka-band, reallocation of Ka-band frequencies to a general satellite service as proposed would still disserve the public interest. The net result of a general satellite service allocation incorporating the proposed services would be a reduction in the number of orbital locations and amount of spectrum available for FSS satellites. During the two decades since the earliest FSS satellites became operational, there has been a constant growth of demand for FSS services. As GTE Service corporation states in its reply comments in Docket No. 89-554, also filed today, "FSS is the only service proposed to be offered as part of the GSS that has a proven track record for service

expansion . . ."[8]

Neither in the instant proceeding nor in Docket No. 89-554 -- the 1992 WARC Preparation Inquiry -- have any MSS or DBS interests asserted that those services need additional frequency allocations at Ka-band. In light of the continuous and continuing growth of demand for FSS services, the Commission should not reduce the supply of FSS expansion capacity by reallocating portions of the spectrum now allocated to FSS in order to increase MSS and DBS allocations through a general satellite service allocation.

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[8] Docket No. 89-554, An Inquiry Relating to Preparation for the International Telecommunication Union World Administrative Radio Conference For Dealing With Frequency Allocations In Certain Parts of the Spectrum, Reply Comments of GTE Service Corporation, filed January 7, 1991, at 5.

CONCLUSION

For all of the reasons stated herein as well as those addressed in GTE Spacenet's initial comments in this proceeding, GTE Spacenet respectfully urges the Commission not to reallocate frequencies at Ka-band to a general satellite service.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, Karen M. Cameron, DO HEREBY CERTIFY that true and correct copies of the foregoing **Reply Comments** have been served, on this 7th day of January, 1991 to parties listed below:

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January 7, 1990

* Hand delivered